SUBCHAPTER E : SOLVENT-USING PROCESSES

DEGREASING PROCESSES

§§115.412, 115.413, 115.415-115.417, 115.419
Effective May 22, 1997

§115.412. Control Requirements.

(a) In the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas as defined in §115.10 of this title (relating to Definitions), the following control requirements shall apply.

(1) No person shall own or operate a system utilizing a volatile organic compound (VOC) for the cold cleaning of objects without the following controls:

(A) A cover shall be provided for each cleaner which shall be kept closed whenever parts are not being handled in the cleaner. The cover shall be designed for easy one-handed operation if any of the following exists:

(i) the true vapor pressure of the solvent is greater than 0.3 pounds per square inch absolute (2 kPa) as measured at 100°F (38°C);

(ii) the solvent is agitated; or

(iii) the solvent is heated.

(B) An internal cleaned-parts drainage facility, for enclosed draining under a cover, shall be provided for all cold cleaners.

(C) A permanent label summarizing the operating requirements in paragraph (1)(F) of this subsection shall be attached to the cleaner in a conspicuous location near the operator.

(D) If a solvent spray is used, it must be a solid fluid stream (not a fine, atomized, or shower-type spray) and at an operating pressure of 10 pounds per square inch gauge or less as necessary to prevent splashing above the acceptable freeboard.

(E) The system shall be equipped with a freeboard that provides a ratio (the freeboard height divided by the degreaser width) equal to or greater than 0.7, or a water cover (solvent must be insoluble in and heavier than water).

(F) The operating procedures shall be as follows:

(i) Waste solvent shall not be disposed of or transferred to another party such that the waste solvent can evaporate into the atmosphere. Waste solvents shall be stored only in covered containers.

(ii) The degreaser cover shall be kept closed whenever parts are not being handled in the cleaner.

(iii) Parts shall be drained for at least 15 seconds or until dripping ceases.

(iv) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(2) No person shall own or operate a system utilizing a VOC for the open-top vapor cleaning of objects without the following controls.

(A) A cover that can be opened and closed easily without disturbing the vapor zone.

(B) The following devices which will automatically shut off the sump heat:

(i) a condenser coolant flow sensor and thermostat which will detect if the condenser coolant is not circulating or if the condenser coolant temperature exceeds the solvent manufacturer's recommendations;

(ii) a solvent level sensor which will detect if the solvent level drops below acceptable design limits; and

(iii) a vapor level sensor which will detect if the vapor level rises above acceptable design limits.

(C) A spray safety switch which will shut off the spray pump to prevent spraying above the vapor level.

(D) One of the following controls:

(i) a freeboard that provides a ratio (the distance from the top of the vapor level to the top edge of the degreasing tank divided by the degreaser width) equal to or greater than 0.75 and, if the degreaser opening is greater than 10 ft^2 ($1m^2$), a powered cover;

(ii) a properly sized refrigerated chiller capable of achieving 85% or greater control of VOC emissions;

(iii) an enclosed design where the cover or door opens only when the dry part is actually entering or exiting the degreaser; or

(iv) a carbon adsorption system with ventilation equal to or greater than 50 cfm/ft^2 (15m^3/min per m^2) of air/vapor area (with the cover open) and exhausting less than 25 parts per million of solvent by volume averaged over one complete adsorption cycle.

(E) A permanent, conspicuous, label summarizing the operating procedures listed in paragraph (2)(F) of this subsection.

(F) The following operating procedures.

(i) The cover shall be closed at all times except when processing work loads through the degreaser.

(ii) Parts shall be positioned so that complete drainage is obtained.

(iii) Parts shall be moved in and out of the degreaser at less than 11 ft/min (3.3 m/min).

(iv) The work load shall be retained in the vapor zone at least 30 seconds or until condensation ceases.

(v) Any pools of solvent on the cleaned parts shall be removed by tipping the part before withdrawing it from the vapor zone.

(vi) Parts shall be allowed to dry within the degreaser freeboard area for at least 15 seconds or until visually dry.

(vii) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(viii) Work loads shall not occupy more than half of the degreaser open top surface area.

(ix) Solvent shall not be sprayed above the vapor level.

(x) Solvent leaks shall be repaired immediately, or the degreaser shall be shut down until repairs are made.

(xi) Waste solvent shall not be disposed of or transferred to another party such that the waste solvent will evaporate into the atmosphere. Waste solvent shall be stored only in covered containers.

(xii) Exhaust ventilation for systems other than those which vent to a major control device shall not exceed 65 cubic feet per minute per ft^2 (20 m^3/min per m^2) of degreaser open area, unless necessary to meet Occupational Safety and Health Administration (OSHA) requirements or unless a

carbon adsorption system is installed as a major control device. Ventilation fans or other sources of air agitation shall not be used near the degreaser opening.

(xiii) Water shall not be visibly detectable in the solvent exiting the water separator.

(3) No person shall own or operate a system utilizing a VOC for the conveyorized cleaning of objects without the following controls:

(A) One of the following major control devices:

(i) a properly sized refrigerated chiller capable of achieving 85% or greater control of VOC emissions; or

(ii) a carbon adsorption system with ventilation equal to or greater than 50 cfm/ft^2 (15 m^3/min/m^2) of air/vapor area (when downtime covers are open) and exhausting less than 25 ppm of solvent by volume averaged over one complete adsorption cycle.

(B) A drying tunnel or other means, such as rotating (tumbling) basket if space is available, to prevent solvent liquid or vapor carry-out.

(C) A condenser flow switch and thermostat which will shut off sump heat if the condenser coolant is not circulating or if the condenser coolant discharge temperature exceeds the solvent manufacturer's recommendation.

(D) A spray safety switch which will shut off the spray pump if the vapor level drops more than 4 inches (10 cm).

(E) A vapor level control thermostat which will shut off the sump heat when the vapor level rises above the designed operating level.

(F) Entrances and exits which silhouette work loads so that the average clearance (between parts and edge of the degreaser opening) is either less than 4 inches (10 cm) or less than 10% of the width of the opening.

(G) Downtime covers which close off the entrance and exit during nonoperating hours.

(H) A permanent, conspicuous label near the operator summarizing the operating requirements in subparagraph (I) of this paragraph.

(I) The following operating procedures.

(i) Exhaust ventilation for systems other than those which vent to a major control device shall not exceed 65 cfm/ft^2 (20 m^3/min/m^2) of degreaser opening, unless necessary to meet OSHA requirements or unless a carbon adsorption system is installed as a major control device. Ventilation fans shall not be used near the degreaser opening.

(ii) Parts shall be positioned so that complete drainage is obtained.

(iii) Vertical conveyor speed shall be maintained at less than 11 ft/min (3.3 m/min).

(iv) Waste solvent shall not be disposed of, or transferred to another party, such that the waste solvent can evaporate into the atmosphere. Waste solvent shall be stored only in covered containers.

(v) Leaks shall be repaired immediately or the degreaser shall be shut down until repairs are made.

(vi) Water shall not be visibly detectable in the solvent exiting the water separator.

(vii) Downtime covers shall be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shut down and removed just before they are started up.

(viii) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(b) For Gregg, Nueces, and Victoria Counties, the following control requirements shall apply.

(1) No person shall own or operate a system utilizing a VOC for the cold cleaning of objects without the following controls:

(A) A cover shall be provided for each cleaner which shall be kept closed whenever parts are not being handled in the cleaner. The cover shall be designed for easy one-handed operation if any of the following exists:

(i) the true vapor pressure of the solvent is greater than 0.3 psia (2 kPa) as measured at 100°F (38°C);

(ii) the solvent is agitated; or

(iii) the solvent is heated.

(B) An internal cleaned-parts drainage facility, for enclosed draining under a cover, shall be provided for all cold cleaners.

(C) A permanent label summarizing the operating requirements in paragraph (1)(F) of this subsection shall be attached to the cleaner in a conspicuous location near the operator.

(D) If a solvent spray is used, it must be a solid fluid stream (not a fine, atomized, or shower-type spray) and at an operating pressure of 10 psig or less as necessary to prevent splashing above the acceptable freeboard.

(E) The system shall be equipped with a freeboard that provides a ratio (the freeboard height divided by the degreaser width) equal to or greater than 0.7, or a water cover (solvent must be insoluble in and heavier than water).

(F) The operating procedures shall be as follows.

(i) Waste solvent shall not be disposed of or transferred to another party such that the waste solvent can evaporate into the atmosphere. Waste solvents shall be stored only in covered containers.

(ii) The degreaser cover shall be kept closed whenever parts are not being handled in the cleaner.

(iii) Parts shall be drained for at least 15 seconds or until dripping ceases.

(iv) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(2) No person shall own or operate a system utilizing a VOC for the open-top vapor cleaning of objects without the following controls:

(A) A cover that can be opened and closed easily without disturbing the vapor zone.

(B) The following devices which will automatically shut off the sump heat:

(i) a condenser coolant flow sensor and thermostat which will detect if the condenser coolant is not circulating or if the condenser coolant temperature exceeds the solvent manufacturer's recommendations;

(ii) a solvent level sensor which will detect if the solvent level drops below acceptable design limits; and

(iii) a vapor level sensor which will detect if the vapor level rises above acceptable design limits.

(C) A spray safety switch which will shut off the spray pump to prevent spraying above the vapor level.

(D) One of the following controls:

(i) a freeboard that provides a ratio (the distance from the top of the vapor level to the top edge of the degreasing tank divided by the degreaser width) equal to or greater than 0.75 and, if the degreaser opening is greater than 10 ft^2 ($1m^2$), a powered cover;

(ii) a properly-sized, refrigerated chiller capable of achieving 85% or greater control of VOC emissions;

(iii) an enclosed design where the cover or door opens only when the dry part is actually entering or exiting the degreaser; or

(iv) a carbon adsorption system with ventilation equal to or greater than 50 cfm/ft^2 ($15m^3$/min per m^2) of air/vapor area (with the cover open) and exhausting less than 25 ppm of solvent by volume averaged over one complete adsorption cycle.

(E) A permanent, conspicuous label summarizing the operating procedures listed in paragraph (2)(F) of this subsection.

(F) The following operating procedures.

(i) The cover shall be closed at all times, except when processing work loads through the degreaser.

(ii) Parts shall be positioned so that complete drainage is obtained.

(iii) Parts shall be moved in and out of the degreaser at less than 11 ft/min (3.3 m/min).

(iv) The work load shall be retained in the vapor zone at least 30 seconds or until condensation ceases.

(v) Any pools of solvent on the cleaned parts shall be removed by tipping the part before withdrawing it from the vapor zone.

(vi) Parts shall be allowed to dry within the degreaser freeboard area for at least 15 seconds or until visually dry.

(vii) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(viii) Work loads shall not occupy more than half of the degreaser open top surface area.

(ix) Solvent shall not be sprayed above the vapor level.

(x) Solvent leaks shall be repaired immediately, or the degreaser shall be shut down until repairs are made.

(xi) Waste solvent shall not be disposed of or transferred to another party such that the waste solvent will evaporate into the atmosphere. Waste solvent shall be stored only in covered containers.

(xii) Exhaust ventilation for systems other than those which vent to a major control device shall not exceed 65 cfm per ft^2 (20 m^3/min per m^2) of degreaser open area, unless necessary to meet OSHA requirements or unless a carbon adsorption system is installed as a major control device. Ventilation fans or other sources of air agitation shall not be used near the degreaser opening.

(xiii) Water shall not be visibly detectable in the solvent exiting the water separator.

(3) No person shall own or operate a system utilizing a VOC for the conveyorized cleaning of objects without the following controls:

(A) One of the following major control devices:

(i) a properly-sized, refrigerated chiller capable of achieving 85% or greater control of VOC emissions; or

(ii) a carbon adsorption system with ventilation equal to or greater than 50 cfm/ft^2 (15 m^3/min/m^2) of air/vapor area (when downtime covers are open) and exhausting less than 25 ppm of solvent by volume averaged over one complete adsorption cycle.

(B) A drying tunnel or other means, such as rotating (tumbling) basket if space is available, to prevent solvent liquid or vapor carry-out.

(C) A condenser flow-switch and thermostat which will shut off sump heat if the condenser coolant is not circulating or if the condenser coolant discharge temperature exceeds the solvent manufacturer's recommendation.

(D) A spray safety switch which will shut off the spray pump if the vapor level drops more than four inches (10 cm).

(E) A vapor level control thermostat which will shut off the sump heat when the vapor level rises above the designed operating level.

(F) Entrances and exits which silhouette work loads so that the average clearance (between parts and edge of the degreaser opening) is either less than four inches (10 cm) or less than 10% of the width of the opening.

(G) Downtime covers which close off the entrance and exit during nonoperating hours.

(H) A permanent, conspicuous label near the operator summarizing the operating requirements in subparagraph (I) of this paragraph.

(I) The following operating procedures:

(i) Exhaust ventilation for systems other than those which vent to a major control device shall not exceed 65 cfm/ft^2 (20 m^3/min/m^2) of degreaser opening, unless necessary to meet OSHA requirements or unless a carbon adsorption system is installed as a major control device. Ventilation fans shall not be used near the degreaser opening.

(ii) Parts shall be positioned so that complete drainage is obtained.

(iii) Vertical conveyor speed shall be maintained at less than 11 ft/min (3.3 m/min).

(iv) Waste solvent shall not be disposed of or transferred to another party such that the waste solvent can evaporate into the atmosphere. Waste solvent shall be stored only in covered containers.

(v) Leaks shall be repaired immediately or the degreaser shall be shut down until repairs are made.

(vi) Water shall not be visibly detectable in the solvent exiting the water separator.

(vii) Downtime covers shall be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shut down and removed just before they are started up.

(viii) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

Adopted February 14, 1996 Effective March 7, 1996

§115.413. Alternate Control Requirements.

(a) For all affected persons in the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this section may be approved by the Executive Director in accordance with §115.910 of this title (relating to Availability of Alternate Means of Control) if emission reductions are demonstrated to be substantially equivalent.

(1) An alternative capture and control system for cold solvent cleaners with a demonstrated overall volatile organic compound (VOC) emission reduction efficiency of 65% or greater may be used in lieu of the requirements of §115.412(a)(1) of this title (relating to Control Requirements), if approved by the Executive Director.

(2) An alternate capture and control system for open-top vapor or conveyorized degreasers with a demonstrated overall VOC emission reduction efficiency of 85% or greater may be used in lieu of the requirements of §115.412(a)(2)(D) or (a)(3)(A) of this title, if approved by the Executive Director.

(b) For all affected persons in Gregg, Nueces, and Victoria Counties, alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this section may be approved by the Executive Director in accordance with §115.910 of this title if emission reductions are demonstrated to be substantially equivalent.

(1) An alternative capture and control system for cold solvent cleaners with a demonstrated overall VOC emission reduction efficiency of 65% or greater may be used in lieu of the requirements of §115.412(b)(1) of this title, if approved by the Executive Director.

(2) An alternate capture and control system for open-top vapor or conveyorized degreasers with a demonstrated overall VOC emission reduction efficiency of 85% or greater may be used in lieu of the requirements of §115.412(b)(2)(D) or (b)(3)(A) of this title, if approved by the Executive Director.

Adopted February 14, 1996 Effective March 7, 1996

§115.415. Testing Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following testing requirements shall apply.

(1) Compliance with §115.412(a)(1) of this title (relating to Control Requirements) shall be determined by applying the following test methods, as applicable:

(A) determination of true vapor pressure using American Society for Testing Materials (ASTM) Test Method D323-89, ASTM Test Method D2879, ASTM Test Method D4953, ASTM Test Method D5190, or ASTM Test Method D5191 for the measurement of Reid vapor pressure (RVP), adjusted for actual storage temperature in accordance with American Petroleum Institute (API) Publication 2517, Third Edition, 1989; or

(B) minor modifications to these test methods and procedures approved by the Executive Director.

(2) Compliance with §115.412(a)(2)(D)(iv) and (a)(3)(A)(ii) of this title and §115.413(a)(2) of this title (relating to Alternate Control Requirements) shall be determined by applying the following test methods, as appropriate:

(A) Test Methods 1-4 (40 Code of Federal Regulations (CFR) 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 18 (40 CFR 60, Appendix A) for determining gaseous organic compound emissions by gas chromatography;

(C) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(D) Test Methods 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis; or

(E) minor modifications to these test methods and procedures approved by the Executive Director.

(b) For Gregg, Nueces, and Victoria Counties, the following testing requirements shall apply.

(1) Compliance with §115.412(b)(1) of this title shall be determined by applying the following test methods, as applicable:

(A) determination of true vapor pressure using ASTM Test Method D323-89, ASTM Test Method D2879, ASTM Test Method D4953, ASTM Test Method D5190, or ASTM Test Method D5191 for the measurement of RVP, adjusted for actual storage temperature in accordance with API Publication 2517, Third Edition, 1989; or

(B) minor modifications to these test methods and procedures approved by the Executive Director.

(2) Compliance with §115.412(b)(2)(D)(iv) and (b)(3)(A)(ii) of this title and §115.413(b)(2) of this title shall be determined by applying the following test methods, as appropriate:

(A) Test Methods 1-4 (40 CFR 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 18 (40 CFR 60, Appendix A) for determining gaseous organic compound emissions by gas chromatography;

(C) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(D) Test Methods 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis; or

(E) minor modifications to these test methods and procedures approved by the Executive Director.

Adopted May 4,1994 Effective May 27, 1994

§115.416. Recordkeeping Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the owner or operator of any open-top vapor or conveyorized degreasing operation shall maintain the following records at the facility for at least two years and shall make such records available upon request to representatives of the Texas Natural Resource Conservation Commission (TNRCC), United States Environmental Protection Agency (EPA), or the local air pollution control agency having jurisdiction in the area.

(1) A record of control equipment maintenance, such as replacement of the carbon in a carbon adsorption unit.

(2) The results of all tests conducted at the facility in accordance with the requirements described in §115.415(a)(2) of this title (relating to Testing Requirements).

(b) For Gregg, Nueces, and Victoria Counties, the owner or operator of any open-top vapor or conveyorized degreasing operation shall maintain the following records at the facility for at least two years and shall make such records available upon request to representatives of the TNRCC, EPA, or the local air pollution control agency having jurisdiction in the area.

(1) A record of control equipment maintenance, such as replacement of the carbon in a carbon adsorption unit.

(2) The results of all tests conducted at the facility in accordance with the requirements described in §115.415(b)(2) of this title.

Adopted February 14, 1996 Effective March 7, 1996

§115.417. Exemptions

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following exemptions shall apply.

(1) Any cold solvent cleaning system is exempt from the provisions of §115.412(a)(1)(B) of this title (relating to Control Requirements) and may use an external drainage facility in place of an internal type drainage system, if the true vapor pressure of the solvent is less than or equal to 0.6 pounds per square inch absolute (psia) (4.1 kPa) as measured at 100°F (38°C) or if a cleaned part can not fit into an internal drainage facility.

(2) Any cold solvent cleaning system is exempt from the requirements of §115.412(a)(1)(E) of this title, if the true vapor pressure of the solvent is less than or equal to 0.6 psia (4.1 kPa) as measured at 100°F (38°C), or if the solvent is not heated above 120°F (49°C).

(3) Any conveyorized degreaser with less than 20 ft^2 (2 m^2) of air/vapor interface is exempt from the requirement of §115.412(a)(3)(A) of this title.

(4) An owner or operator who operates a remote reservoir cold solvent cleaner which uses solvent with a true vapor pressure equal to or less than 0.6 psia (4.1 kPa) measured at 100 degrees Fahrenheit (38 degrees Celsius) and which has a drain area less than 16 in^2 (100 cm^2) and who properly disposes of waste solvent in enclosed containers is exempt from §115.412(a)(1) of this title.

(b) For Gregg, Nueces, and Victoria Counties, the following exemptions shall apply.

(1) Any cold solvent cleaning system is exempt from the provisions of §115.412(b)(1)(B) of this title and may use an external drainage facility in place of an internal type drainage system, if the true vapor pressure of the solvent is less than or equal to 0.6 psia (4.1 kPa) as measured at 100°F (38°C) or if a cleaned part can not fit into an internal drainage facility.

(2) Any cold solvent cleaning system is exempt from the requirements of §115.412(b)(1)(E) of this title, if the true vapor pressure of the solvent is less than or equal to 0.6 psia (4.1 kPa) as measured at 100°F (38°C), or if the solvent is not heated above 120°F (49°C).

(3) Degreasing operations located on any property which can emit, when uncontrolled, a combined weight of VOC less than 550 pounds (249.5 kg) in any consecutive 24-hour period are exempt from the provisions of §115.412(b) of this title.

(4) Any conveyorized degreaser with less than 20 ft^2 (2 m^2) of air/vapor interface is exempt from the requirements of §115.412(b)(3)(A) of this title.

(5) An owner or operator who operates a remote reservoir cold solvent cleaner which uses solvent with a true vapor pressure equal to or less than 0.6 psia (4.1 Kpa) measured at 100 degrees Fahrenheit (38 degrees Celsius) and which has a drain area less than 16 in^2 (100 cm^2) and who properly disposes of waste solvent in enclosed containers is exempt from §115.412(b)(1) of this title.

§115.419. Counties and Compliance Schedules.

All affected persons in Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Gregg, Hardin, Harris, Jefferson, Liberty, Montgomery, Nueces, Orange, Tarrant, Victoria, and Waller Counties shall continue to comply with this undesignated head (relating to Degreasing Processes) as required by §115.930 of this title (relating to Compliance Dates).

Adopted February 14, 1996 Effective March 7, 1996

SURFACE COATING PROCESSES

Effective May 22, 1997
§§115.421-115.427, 115.429

§115.421. Emission Specifications.

(a) No person in the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas as defined in §115.10 of this title (relating to Definitions) may cause, suffer, allow, or permit volatile organic compound (VOC) emissions from the surface coating processes as defined in §115.10 of this title affected by paragraphs (1)-(13) of this subsection to exceed the specified emission limits. These limitations are based on the daily weighted average of all coatings delivered to each coating line, except for those in paragraph (10) of this subsection which are based on paneling surface area and those in paragraph (11) of this subsection which are based on the VOC content of architectural coatings sold or offered for sale. For the purposes of this undesignated head (relating to Surface Coating Processes), daily weighted average means the total weight of VOC emissions from all coatings, divided by the total volume of all coatings (minus water and exempt solvent) applied each day.

(1) Large appliance coating. VOC emissions from the application, flashoff, and oven areas during the coating of large appliances (prime and topcoat, or single coat) shall not exceed 2.8 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.34 kg/liter).

(2) Metal furniture coating. VOC emissions from metal furniture coating lines (prime and topcoat, or single coat) shall not exceed 3.0 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.36 kg/liter).

(3) Coil coating. VOC emissions from the coating (prime and topcoat, or single coat) of metal coils shall not exceed 2.6 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.31 kg/liter).

(4) Paper coating. VOC emissions from the coating of paper (or specified tapes or films) shall not exceed 2.9 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.35 kg/liter).

(5) Fabric coating. VOC emissions from the coating of fabric shall not exceed 2.9 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.35 kg/liter).

(6) Vinyl coating. VOC emissions from the coating of vinyl fabrics or sheets shall not exceed 3.8 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.45 kg/liter). Plastisol coatings should not be included in calculations.

(7) Can coating. The following VOC emission limits shall be achieved, on the basis of solvent content per gallon of coating (minus water and exempt solvent) delivered to the application system:

Affected Operation	VOC Emission Limitation pounds per gallon of coating	kg per liter of coating
sheet basecoat (exterior and interior) and over-varnish	2.8	0.34
two-piece can exterior (base-coat and over-varnish)	2.8	0.34
two- and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	4.2	0.51
three-piece can side-seam spray	5.5	0.66
end sealing compound	3.7	0.44

(8) Vehicle coating.

(A) The following VOC emission limits shall be achieved for all automobile and light-duty truck manufacturing, on the basis of solvent content per gallon of coating (minus water and exempt solvents) delivered to the application system or for primer surfacer and top coat application, compliance may be demonstrated on the basis of VOC emissions per gallon of solids deposited as determined by §115.425(a)(3) of this title (relating to Testing Requirements).

Operation (including application, flashoff, and oven areas)	VOC Emission Limitation			
	Coating delivered (minus water and exempt solvent)		Solids deposited	
	lb/gal	kg/liter	lb/gal	kg/liter
prime application (body and front-end sheet metal)	1.2	0.15	N/A	N/A
primer surfacer application	2.8	0.34	15.1	1.81
topcoat application	2.8	0.34	15.1	1.81
final repair application	4.8	0.58	*	*

* As an alternative to the emission limitation of 4.8 pounds of VOC per gallon of coating applied for final repair, if a source owner does not compile records sufficient to enable determination of a daily weighted average VOC content, compliance with the final repair emission limitation may be demonstrated each day by meeting a standard of 4.8 pounds of VOC per gallon of coating (minus water and exempt solvents) on an occurrence weighted average basis. Compliance with such alternative emission limitation shall be determined in accordance with the procedure specified in §115.425(a)(3) of this title.

(B) VOC emissions from the coatings or solvents used in vehicle refinishing (body shops) as defined in §115.10 of this title shall not exceed the following limits, as delivered to the application system:

(i) 5.0 pounds per gallon (0.60 kg/liter) of coating (minus water and exempt solvent) for primers or primer surfacers, as defined in §115.10 of this title;

(ii) 5.5 pounds per gallon (0.66 kg/liter) of coating (minus water and exempt solvent) for precoat, as defined in §115.10 of this title;

(iii) 6.5 pounds per gallon (0.78 kg/liter) of coating (minus water and exempt solvent) for pretreatment, as defined in §115.10 of this title;

(iv) 5.0 pounds per gallon (0.60 kg/liter) of coating (minus water and exempt solvent) for single-stage topcoats;

(v) 5.0 pounds per gallon (0.60 kg/liter) of coating (minus water and exempt solvent) for basecoat/clearcoat systems, as defined in §115.10 of this title;

(vi) 5.2 pounds per gallon (0.62 kg/liter) of coating (minus water and exempt solvent) for three-stage systems, as defined in §115.10 of this title;

(vii) 7.0 pounds per gallon (0.84 kg/liter) of coating (minus water and exempt solvent) for specialty coatings, as defined in §115.10 of this title;

(viii) 6.0 pounds per gallon (0.72 kg/liter) of coating (minus water and exempt solvent) for sealers, as defined in §115.10 of this title; and

(ix) 1.4 pounds per gallon (0.17 kg/liter) of wipe-down solutions, as defined in §115.10 of this title.

(C) Additional control requirements for vehicle refinishing (body shops) are referenced in §115.422 of this title (relating to Control Requirements).

(9) Miscellaneous metal parts and products coating.

(A) VOC emissions from the coating of miscellaneous metal parts and products shall not exceed the following limits for each surface coating type:

(i) 4.3 pounds per gallon (0.52 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as a clear coat; or as an interior protective coating for pails and drums;

(ii) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as a low-bake coating; or that utilizes air or forced air driers;

(iii) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as an extreme performance coating, including chemical milling maskants;

(iv) 3.0 pounds per gallon (0.36 kg/liter) of coating (minus water and exempt solvent) delivered to the application system for all other coating applications, including high-bake coatings, that pertain to miscellaneous metal parts and products; and

(v) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as a prime coat for the exterior of aircraft.

(B) If more than one emission limitation in subparagraph (A) of this paragraph applies to a specific coating, then the least stringent emission limitation shall apply.

(C) All VOC emissions from non-exempt solvent washings shall be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(10) Factory surface coating of flat wood paneling. The following emission limits shall apply to each product category of factory-finished paneling (regardless of the number of coats applied):

Product Category	VOC Emission Limitation	
	lb VOC/ 1000 ft^2 of coated surface	kg VOC/ 100 m^2 of coated surface
printed interior wall panels made of hardwood plywood and thin particle board (less than 1/4 inch (0.64 cm)) in thickness	6.0	2.9
natural finish hardwood plywood panels	12.0	5.8
hardwood paneling with Class II finish (ANSI Standard PS-59-73)	10.0	4.8

(11) Architectural coatings. Any coating sold or offered for sale as an architectural coating shall have the date of manufacture clearly marked on each container, and the VOC content shall not exceed the following limits:

(A) 2.2 pounds per gallon (0.26 kg/liter) of coating (minus water and exempt solvent) for non-flat and flat latex paints;

(B) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) for interior alkyd paints;

(C) 4.0 pounds per gallon (0.48 kg/liter) of coating (minus water and exempt solvent) for exterior alkyd paints;

(D) 4.5 pounds per gallon (0.54 kg/liter) of coating (minus water and exempt solvent) for epoxy paints;

(E) 6.0 pounds per gallon (0.72 kg/liter) of coating (minus water and exempt solvent) for exterior stains;

(F) 7.0 pounds per gallon (0.84 kg/liter) of coating (minus water and exempt solvent) for interior stains;

(G) 4.5 pounds per gallon (0.54 kg/liter) of coating (minus water and exempt solvent) for urethane coatings;

(H) 4.5 pounds per gallon (0.54 kg/liter) of coating (minus water and exempt solvent) for alkyd varnishes; and

(I) 5.6 pounds per gallon (0.67 kg/liter) of coating (minus water and exempt solvent) for nitrocellulose-based lacquers.

(12) Surface coating of mirror backing.

(A) VOC emissions from the coating of mirror backing shall not exceed the following limits for each surface coating application method:

(i) 4.2 pounds per gallon (0.50 kg/liter) of coating (minus water and exempt solvent) delivered to a curtain coating application system;

(ii) 3.6 pounds per gallon (0.43 kg/liter) of coating (minus water and exempt solvent) delivered to a roll coating application system.

(B) All VOC emissions from solvent washings shall be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph, unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(13) Surface coating of wood parts and products.

(A) In the Dallas/Fort Worth, El Paso, and Houston/Galveston areas, VOC emissions from the coating of wood parts and products shall not exceed the following limits for each surface coating type:

(i) 5.9 pounds per gallon (0.71 kg/liter) of coating (minus water and exempt solvent) for clear topcoats, as defined in §115.10 of this title;

(ii) 6.5 pounds per gallon (0.78 kg/liter) of coating (minus water and exempt solvent) for wash coats, as defined in §115.10 of this title;

(iii) 6.0 pounds per gallon (0.72 kg/liter) of coating (minus water and exempt solvent) for final repair coats, as defined in §115.10 of this title;

(iv) 6.6 pounds per gallon (0.79 kg/liter) of coating (minus water and exempt solvent) for semitransparent wiping and glazing stains, as defined in §115.10 of this title;

(v) 6.9 pounds per gallon (0.83 kg/liter) of coating (minus water and exempt solvent) for semitransparent spray stains and toners, as defined in §115.10 of this title;

(vi) 5.5 pounds per gallon (0.66 kg/liter) of coating (minus water and exempt solvent) for opaque ground coats and enamels, as defined in §115.10 of this title;

(vii) 6.2 pounds per gallon (0.74 kg/liter) of coating (minus water and exempt solvent) for clear sealers, as defined in §115.10 of this title;

(viii) for shellac, as defined in §115.10 of this title:

(I) 5.4 pounds per gallon (0.65 kg/liter) of coating (minus water and exempt solvent) for clear shellac; and

(II) 5.0 pounds per gallon (0.60 kg/liter) of coating (minus water and exempt solvent) for opaque shellac;

(ix) 5.0 pounds per gallon (0.60 kg/liter) of coating (minus water and exempt solvent) for varnish, as defined in §115.10 of this title; and

(x) 7.0 pounds per gallon (0.84 kg/liter) of coating (minus water and exempt solvent) for all other coatings.

(B) All VOC emissions from solvent washings shall be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph, unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(C) The requirements of §115.423(a)(3) of this title (relating to Alternate Control Requirements) do not apply at wood parts and products coating facilities if:

(i) a vapor recovery system is used to control emissions from wood parts and products coating operations; and

(ii) all wood parts and products coatings comply with the emission limitations in subparagraph (A) of this paragraph.

(b) No person in Gregg, Nueces, and Victoria Counties may cause, suffer, allow, or permit VOC emissions from the surface coating processes as defined in §115.10 of this title affected by paragraphs (1)-(9) of this subsection to exceed the specified emission limits. These limitations are based on the daily weighted average of all coatings delivered to each coating line, except for those in paragraph (9) of this subsection which are based on paneling surface area. For the purposes of this undesignated head (relating to Surface Coating Processes), daily weighted average means the total weight of VOC emissions from all coatings, divided by the total volume of all coatings (minus water and exempt solvent) applied each day.

(1) Large appliance coating. VOC emissions from the application, flashoff, and oven areas during the coating of large appliances (prime and topcoat, or single coat) shall not exceed 2.8 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.34 kg/liter).

(2) Metal furniture coating. VOC emissions from metal furniture coating lines (prime and topcoat, or single coat) shall not exceed 3.0 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.36 kg/liter).

(3) Coil coating. VOC emissions from the coating (prime and topcoat, or single coat) of metal coils shall not exceed 2.6 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.31 kg/liter).

(4) Paper coating. VOC emissions from the coating of paper (or specified tapes or films) shall not exceed 2.9 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.35 kg/liter).

(5) Fabric coating. VOC emissions from the coating of fabric shall not exceed 2.9 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.35 kg/liter).

(6) Vinyl coating. VOC emissions from the coating of vinyl fabrics or sheets shall not exceed 3.8 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.45 kg/liter). Plastisol coatings should not be included in calculations.

(7) Can coating. The following VOC emission limits shall be achieved, on the basis of solvent content per gallon of coating (minus water and exempt solvent) delivered to the application system:

	VOC Emission Limitation	
Affected Operation	pounds per gallon of coating	kg per liter of coating
sheet basecoat (exterior and interior) and over-varnish	2.8	0.34
two-piece can exterior (base- coat and over-varnish)	2.8	0.34
two- and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	4.2	0.51
three-piece can side-seam spray	5.5	0.66
end sealing compound	3.7	0.44

(8) Miscellaneous metal parts and products coating.

(A) VOC emissions from the coating of miscellaneous metal parts and products shall not exceed the following limits for each surface coating type:

(i) 4.3 pounds per gallon (0.52 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as a clear coat; or as an interior protective coating for pails and drums;

(ii) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as a low-bake coating; or that utilizes air or forced air driers;

(iii) 3.5 pounds per gallon (0.42 kg/liter) of coating (minus water and exempt solvent) delivered to the application system as an extreme performance coating, including chemical milling maskants; and

(iv) 3.0 pounds per gallon (0.36 kg/liter) of coating (minus water and exempt solvent) delivered to the application system for all other coating applications, including high-bake coatings, that pertain to miscellaneous metal parts and products;

(B) If more than one emission limitation in subparagraph (A) of this paragraph applies to a specific coating, then the least stringent emission limitation shall apply.

(C) All VOC emissions from nonexempt solvent washings shall be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph, unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(9) Factory surface coating of flat wood paneling. The following emission limits shall apply to each product category of factory-finished paneling (regardless of the number of coats applied):

Product Category	VOC Emission Limitation	
	lb VOC/ 1000 ft^2 of coated surface	kg VOC/ 100 m^2 of coated surface
printed interior wall panels made of hardwood plywood and thin particle board (less than 1/4 inch (0.64 cm) in thickness)	6.0	2.9
natural finish hardwood plywood panels	12.0	5.8
hardboard paneling with Class II finish (ANSI standard PS-59-73)	10.0	4.8

§115.422. Control Requirements.

For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following control requirements shall apply.

(1) The owner or operator of each vehicle refinishing (body shop) operation shall minimize volatile organic compound emissions during equipment clean-up by utilizing the following procedures:

(A) install and operate a system which totally encloses spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures. Non-enclosed cleaners may be used if the vapor pressure of the cleaning solvent is less than 100 millimeters of mercury (mm Hg) at 68°F and the solvent is directed towards a drain that leads directly to an enclosed remote reservoir;

(B) keep all wash solvents in an enclosed reservoir that is covered at all times, except when being refilled with fresh solvents; and

(C) keep all waste solvents and other cleaning materials in closed containers.

(2) Each vehicle refinishing (body shop) operation shall use coating application equipment with a transfer efficiency of at least 65%, unless otherwise specified in an alternate means of control approved by the Executive Director in accordance with §115.910 of this title (relating to Availability of Alternate Means of Control). High-volume low-pressure (HVLP) spray guns, as defined in §115.10 of this title (relating to Definitions), are assumed to comply with the 65% transfer efficiency requirement.

(3) Any surface coating operation that becomes subject to the provisions of §115.421(a) of this title (relating to Emission Specifications) by exceeding the provisions of §115.427(a) of this title (relating to Exemptions) shall remain subject to the provisions in §115.421(a) of this title, even if throughput or emissions later fall below exemption limits unless and until emissions are reduced to no more than the controlled emissions level existing before implementation of the project by which throughput or emission rate was reduced to less than the applicable exemption limits in §115.427(a) of this title, and:

(A) the project by which throughput or emission rate was reduced is authorized by any permit or permit amendment or standard permit or standard exemption required by Chapter 116 or Chapter 106 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification; and Exemptions from Permitting). If a standard exemption is available for the project, compliance with this subsection must be maintained for 30 days after the filing of documentation of compliance with that standard exemption; or

(B) if authorization by permit, permit amendment, standard permit, or standard exemption is not required for the project, the owner/operator has given the executive director 30 days' notice of the project in writing.

§115.423. Alternate Control Requirements.

(a) For all affected persons in the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following alternate control requirements may apply:

(1) Emission calculations for surface coating operations performed to satisfy the conditions of §101.23 of this title (relating to Alternate Emission Reduction "Bubble" Policy), §115.910 of this title (relating to Availability of Alternate Means of Control), or other demonstrations of equivalency with the specified emission limits in this section shall be based on the pounds of volatile organic compounds (VOC) per gallon of solids for all affected coatings. The following equation shall be used to convert emission limits from pounds of VOC per gallon of coating to pounds of VOC per gallon of solids:

$$S = C / (1 - (C / D))$$

where:

S = the applicable emission limit from §115.421(a) of this title (relating to Emission Specifications) expressed on a pounds of VOC per gallon of solids basis

C = the applicable emission limit from §115.421(a) of this title expressed on a pounds of VOC per gallon of coating basis

D = an assumed solvent density of 7.36 pounds of VOC per gallon

(2) Any alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria, such as use of improved transfer efficiency in this section, may be approved by the Executive Director in accordance with §115.910 of this title if emission reductions are demonstrated to be substantially equivalent.

(3) If a vapor recovery system is used to control emissions from coating operations, the capture and abatement system shall be capable of achieving and maintaining emission reductions equivalent to the emission limitations of §115.421(a) of this title (relating to Emission Specifications) and an overall control efficiency of at least 80% of the VOC emissions from those coatings. The owner or operator of any surface coating facility shall submit design data for each capture system and emission control device which is proposed for use to the Executive Director for approval. Any capture efficiency testing shall be performed in accordance with §115.425(a)(4) of this title (relating to Testing Requirements).

(4) For any surface coating process or processes at a specific property, the Executive Director may approve requirements different from those in §115.421(a)(9) of this title based upon his determination that such requirements will result in the lowest emission rate that is technologically and economically reasonable. When he makes such a determination, the Executive Director shall specify the date or dates by which such different requirements shall be met and shall specify any requirements to be met in the interim. If the emissions resulting from such different requirements equal or exceed 25 tons a year for a property, the determinations for that property shall be reviewed every two years. Executive Director approval

does not necessarily constitute satisfaction of all federal requirements nor eliminate the need for approval by the United States Environmental Protection Agency (EPA) in cases where specified criteria for determining equivalency have not been clearly identified in applicable sections of this chapter.

(b) For all affected persons in Gregg, Nueces, and Victoria Counties, the following alternate control requirements may apply:

(1) Emission calculations for surface coating operations performed to satisfy the conditions of §101.23 of this title, §115.910 of this title, or other demonstrations of equivalency with the specified emission limits in this section shall be based on the pounds of VOC per gallon of solids for all affected coatings. The following equation shall be used to convert emission limits from pounds of VOC per gallon of coating to pounds of VOC per gallon of solids:

$$S = C / (1 - (C / D))$$

where:

S = the applicable emission limit from §115.421(b) of this title expressed on a pounds of VOC per gallon of solids basis

C = the applicable emission limit from §115.421(b) of this title expressed on a pounds of VOC per gallon of coating basis

D = an assumed solvent density of 7.36 pounds of VOC per gallon

(2) Any alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria, such as use of improved transfer efficiency in this section, may be approved by the Executive Director in accordance with §115.910 of this title if emission reductions are demonstrated to be substantially equivalent.

(3) If a vapor recovery system is used to control emissions from coating operations, the capture and abatement system shall be capable of achieving and maintaining emission reductions equivalent to the emission limitations of §115.421(b) of this title and an overall control efficiency of at least 80% of the VOC emissions from those coatings. The owner or operator of any surface coating facility shall submit design data for each capture system and emission control device which is proposed for use to the Executive Director for approval.

(4) For any surface coating process or processes at a specific property the Executive Director may approve requirements different from those in §115.421(b)(8) of this title based upon his determination that such requirements will result in the lowest emission rate that is technologically and economically reasonable. When he makes such a determination, the Executive Director shall specify the date or dates by which such different requirements shall be met and shall specify any requirements to be met in the interim. If the emissions resulting from such different requirements equal or exceed 25 tons a year for a property, the determinations for that property shall be reviewed every two years. Executive Director approval does not necessarily constitute satisfaction of all federal requirements nor eliminate the need for approval by

the EPA in cases where specified criteria for determining equivalency have not been clearly identified in applicable sections of this chapter.

Adopted February 14, 1996 Effective March 7, 1996

§115.424. Inspection Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following inspection requirements shall apply:

(1) All surface coating processes or operations affected by §115.421(a) of this title (relating to Emissions Specifications) must provide samples, without charge, upon request by representatives of the executive director, United States Environmental Protection Agency (EPA), or local air pollution control agency.

(2) All wholesalers and retailers affected by §115.421(a) of this title must provide samples, without charge, upon request by representatives of the executive director, EPA, or local air pollution control agency.

(3) The representative or inspector requesting the sample will determine the amount of coating needed to test the sample to determine compliance.

(b) For Gregg, Nueces, and Victoria Counties, the following inspection requirements shall apply:

(1) All surface coating processes or operations affected by §115.421(b) of this title must provide samples, without charge, upon request by representatives of the executive director, EPA, or local air pollution control agency.

(2) The representative or inspector requesting the sample will determine the amount of coating needed to test the sample to determine compliance.

Adopted April 30, 1997 Effective May 22, 1997

§115.425. Testing Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following testing requirements shall apply:

(1) Compliance with §115.421(a) of this title (concerning Emission Specifications) shall be determined by applying the following test methods, as appropriate:

(A) Test Method 24 (40 Code of Federal Regulations (CFR) 60, Appendix A) with a one-hour bake;

(B) ASTM Test Methods D 1186-06.01, D 1200-06.01, D 3794-06.01, D 2832-69, D 1644-75, and D 3960-81;

(C) United States Environmental Protection Agency (EPA) guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds (VOC) Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December, 1984;

(D) additional test procedures described in 40 CFR 60.446; or

(E) minor modifications to these test methods approved by the Executive Director.

(2) Compliance with §115.423(a)(3) of this title (relating to Alternate Control Requirements) shall be determined by applying the following test methods, as appropriate:

(A) Test Methods 1-4 (40 CFR 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(C) Test Method 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(D) additional performance test procedures described in 40 CFR 60.444; or

(E) minor modifications to these test methods approved by the Executive Director.

(3) Compliance with the alternative emission limits in §115.421(a)(8)(A) of this title shall be determined by applying the following test methods, as appropriate:

(A) Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Duty Truck Topcoat Operations (EPA 450/3-88-018); or

(B) The procedure contained in this paragraph for determining daily compliance with the alternative emission limitation in §115.421(a)(8)(A) of this title for final repair. Calculation of occurrence weighted average for each combination of repair coatings (primer, specific basecoat, clearcoat) shall be determined by the following procedure.

(i) The characteristics identified below, which are represented in the following equations by the variables shown, are established for each repair material as sprayed:

	Primer	Basecoat	Clearcoat
VOC (lb/gal) -	Vp	Vb	Vc
Vol. solids of coating - minus water and exempt solvent (%)	Sp	Sb	Sc
Target dry film build (mils) -	Tp	Tb	Tc

(ii) The relative occurrence weighted usage is calculated as follows:

Relative Primer Usage (Up)
Up = Tp x (100/Sp)
Relative Basecoat Usage (Ub)
Ub = Tb x (100/Sb)
Relative Clearcoat Usage (Uc)
Uc = Tc x (100/Sc)

(iii) The occurrence weighted average (Q) in pounds of VOC per gallon of coating (minus water and exempt solvents) as applied for each potential combination of repair coatings is calculated as follows:

$$Q = \frac{(Up \times Vp) + (Ub \times Vb) + (Uc \times Vc)}{(Up) + (Ub) + (Uc)}$$

(4) The capture efficiency shall be measured using applicable procedures outlined in 40 CFR Part 52.741, Subpart O, Appendix B. These procedures are:

Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure
Procedure L - VOC Input
Procedure G.2 - Captured VOC Emissions (Dilution Technique)
Procedure F.1 - Fugitive VOC Emissions from Temporary Enclosures
Procedure F.2 - Fugitive VOC Emissions from Building Enclosures

(A) Exemptions to capture efficiency testing requirements:

(i) If a source installs a permanent total enclosure (PTE) which meets the specifications of Procedure T and which directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted from capture efficiency testing requirements. This does not

exempt the source from performance of any control device efficiency testing that may be required. In addition, a source must demonstrate all criteria for a PTE are met during testing for control efficiency.

(ii) If a source uses a control device designed to collect and recover VOC (e.g., carbon adsorber), an explicit measurement of capture efficiency is not necessary if the following conditions are met. The overall control of the system can be determined by directly comparing the input liquid VOC to the recovered liquid VOC. The general procedure for use in this situation is given in 40 CFR 60.433 with the following additional restrictions:

(I) the source must be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average. This must be done within 72 hours following each 24-hour period, and

(II) the solvent recovery system (i.e., capture and control system) must be dedicated to a single process line (e.g., one process line venting to a carbon adsorber system); or if the solvent recovery system controls multiple process lines, the source must be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

(B) The capture efficiency shall be calculated using one of the following four protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the Executive Director and EPA.

(i) Gas/gas method using Temporary Total Enclosure (TTE). EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:

$$CE = Gw / (Gw + Fw)$$

Where:

CE = capture efficiency, decimal fraction
Gw = mass of VOC captured and delivered to control device using a TTE (use Procedure G.2)
Fw = mass of fugitive VOC that escapes from a TTE (use Procedure F.1)

(ii) Liquid/gas method using TTE. EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:

$$CE = (L - F) / L$$

Where:

CE = capture efficiency, decimal fraction
L = mass of liquid VOC input to process (use Procedure L)
F = mass of fugitive VOC that escapes from a TTE (use Procedure F.1)

(iii) Gas/gas method using the building or room in which the affected source is located as the enclosure (BE) and in which G and F are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = G / (G + Fb)$$

Where:

CE = capture efficiency, decimal fraction
G = mass of VOC captured and delivered to a control device (use Procedure G.2)
Fb = mass of fugitive VOC that escapes from building enclosure (use Procedure F.2)

(iv) Liquid/gas method using a BE in which L and F are measured while operating only the affected facility. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = (L - Fb) / L$$

Where:

CE = capture efficiency, decimal fraction
L = mass of liquid VOC input to process (use Procedure L)
Fb = mass of fugitive VOC that escapes from BE (use Procedure F.2)

(C) The following conditions must be met in measuring capture efficiency:

(i) Any error margin associated with a test protocol may not be incorporated into the results of a capture efficiency test.

(ii) All affected facilities shall accomplish the initial capture efficiency testing by July 31, 1992 in Brazoria, Dallas, El Paso, Galveston, Harris, Jefferson, Orange, and Tarrant Counties, and by July 31, 1993 in Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and

Waller Counties, except that all mirror backing coating facilities shall accomplish the initial capture efficiency testing by July 31, 1994.

(iii) During an initial pretest meeting, the Texas Natural Resource Conservation Commission (TNRCC) and the source owner or operator shall identify those operating parameters which shall be monitored to ensure that capture efficiency does not change significantly over time. These parameters shall be monitored and recorded initially during the capture efficiency testing and thereafter during facility operation. The TNRCC may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

(b) For Gregg, Nueces, and Victoria Counties, the following testing requirements shall apply:

(1) Compliance with §115.421(b) of this title shall be determined by applying the following test methods, as appropriate:

(A) Test Method 24 (40 CFR 60, Appendix A) with a one-hour bake;

(B) ASTM Test Methods D 1186-06.01, D 1200-06.01, D 3794-06.01, D 2832-69, D 1644-75, and D 3960-81;

(C) EPA guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December, 1984;

(D) additional test procedures described in 40 CFR 60.446; or

(E) minor modifications to these test methods approved by the Executive Director.

(2) Compliance with §115.423(b)(3) of this title shall be determined by applying the following test methods, as appropriate:

(A) Test Methods 1-4 (40 CFR 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(C) Test Method 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(D) additional performance test procedures described in 40 CFR 60.444; or

(E) minor modifications to these test methods approved by the Executive Director.

Adopted February 14, 1996 Effective March 7, 1996

§115.426. Monitoring and Recordkeeping Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following recordkeeping requirements shall apply:

(1) Any person affected by §115.421(a) of this title (relating to Emission Specifications) shall satisfy the following recordkeeping requirements.

(A) A material data sheet shall be maintained which documents the volatile organic compound (VOC) content, composition, solids content, solvent density, and other relevant information regarding each coating and solvent available for use in the affected surface coating processes sufficient to determine continuous compliance with applicable control limits.

(B) Records shall be maintained of the quantity and type of each coating and solvent consumed during the specified averaging period. Such records shall be sufficient to calculate the applicable weighted average of VOC for all coatings. As an alternative to the recordkeeping requirements of this subparagraph, any vehicle refinishing (body shop) operation affected by §115.421(a)(8)(B) of this title may substitute the recordkeeping requirements specified in Standard Exemption 124 as referenced in §116.211 of this title (relating to Standard Exemption List) provided that all coatings and solvents meet the emission limits of §115.421(a)(8)(B) of this title. If an affected vehicle refinishing (body shop) operation uses any coating(s) or solvent(s) which exceeds the limits of §115.421(a)(8)(B) of this title, then that vehicle refinishing (body shop) operation shall maintain daily records of the quantity and type of each coating and solvent consumed in sufficient detail to calculate the daily weighted average of VOC for all coatings and solvents.

(C) Records shall be maintained of any testing conducted at an affected facility in accordance with the provisions specified in §115.425(a)(1) of this title (relating to Testing Requirements).

(D) Records required by subparagraphs (A)-(C) of this paragraph shall be maintained for at least two years and shall be made available upon request by representatives of the executive director, United States Environmental Protection Agency (EPA), or any local air pollution control agency.

(2) The owner or operator of any surface coating facility which utilizes a vapor recovery system approved by the executive director in accordance with §115.423(a)(3) of this title (relating to Alternate Control Requirements) shall:

(A) install and maintain monitors to accurately measure and record operational parameters of all required control devices, as necessary, to ensure the proper functioning of those devices in accordance with design specifications, including:

(i) continuous monitoring of the exhaust gas temperature of direct-flame incinerators and/or the gas temperature immediately upstream and downstream of any catalyst bed;

(ii) the total amount of VOC recovered by carbon adsorption or other solvent recovery systems during a calendar month,

(iii) continuous monitoring of carbon adsorption bed exhaust; and

(iv) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities;

(B) maintain records of any testing conducted at an affected facility in accordance with the provisions specified in §115.425(a)(2) of this title; and

(C) maintain all records at the affected facility for at least two years and make such records available to representatives of the executive director, EPA, or any local air pollution control agency, upon request.

(3) The owner or operator shall maintain, on file, the capture efficiency protocol submitted under §115.425(a)(4) of this title. The owner or operator shall submit all results of the test methods and capture efficiency protocols to the TNRCC within 60 days of the actual test date. The source owner or operator shall maintain records of the capture efficiency operating parameter values on site for a minimum of one year. If any changes are made to capture or control equipment, the owner or operator is required to notify the Executive Director in writing within thirty (30) days of these changes and a new capture efficiency and/or control device destruction or removal efficiency test may be required.

(4) Records shall be maintained sufficient to document the applicability of the conditions for exemptions referenced in §115.427(a) of this title (relating to Exemptions).

(b) For Gregg, Nueces, and Victoria Counties, the following recordkeeping requirements shall apply:

(1) Any person affected by §115.421(b) of this title shall satisfy the following recordkeeping requirements:

(A) A material data sheet shall be maintained which documents the VOC content, composition, solids content, solvent density, and other relevant information regarding each coating and solvent available for use in the affected surface coating processes sufficient to determine continuous compliance with applicable control limits.

(B) Records shall be maintained of the quantity and type of each coating and solvent consumed during the specified averaging period. Such records shall be sufficient to calculate the applicable weighted average of VOC for all coatings.

(C) Records shall be maintained of any testing conducted at an affected facility in accordance with the provisions specified in §115.425(b)(1) of this title.

(D) Records required by subparagraphs (A)-(C) of this paragraph shall be maintained for at least two years and shall be made available upon request by representatives of the executive director, EPA, or local air pollution control agency.

(2) The owner or operator of any surface coating facility which utilizes a vapor recovery system approved by the executive director in accordance with §115.423(b)(3) of this title shall:

(A) install and maintain monitors to accurately measure and record operational parameters of all required control devices as necessary to ensure the proper functioning of those devices in accordance with design specifications; including

(i) continuous monitoring of the exhaust gas temperature of direct-flame incinerators and/or the gas temperature immediately upstream and downstream of any catalyst bed;

(ii) the total amount of VOC recovered by carbon adsorption or other solvent recovery systems during a calendar month;

(iii) continuous monitoring of carbon adsorption bed exhaust; and

(iv) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities;

(B) maintain records of any testing conducted at an affected facility in accordance with the provisions specified in §115.425(b)(2) of this title; and

(C) maintain all records at the affected facility for at least two years and make such records available to representatives of the executive director, EPA, or local air pollution control agency, upon request.

(3) Records shall be maintained sufficient to document the applicability of the conditions for exemptions referenced in §115.427(b) of this title.

Adopted April 30, 1997 Effective May 22, 1997

§115.427. Exemptions.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following exemptions shall apply:

(1) The following coating operations are exempt from the application of §115.421(a)(9) of this title (relating to Emission Specifications):

(A) exterior of fully assembled aircraft, except as required by §115.421(a)(9)(A)(v) of this title;

(B) vehicle refinishing (body shops), except as required by §115.421(a)(8)(B) and (C) of this title;

(C) exterior of fully assembled marine vessels; and

(D) exterior of fully assembled fixed offshore structures.

(2) The following coating operations are exempt from the application of §115.421(a)(10) of this title:

(A) the manufacture of exterior siding;

(B) tile board; or

(C) particle board used as a furniture component.

(3) The following exemptions shall apply to surface coating operations, except for aircraft prime coating controlled by §115.421(a)(9)(A)(v) of this title and vehicle refinishing (body shops) controlled by §115.421(a)(8)(B) and (C) of this title.

(A) Surface coating operations on a property which, when uncontrolled, will emit a combined weight of VOC of less than 3 pounds per hour and 15 pounds in any consecutive 24-hour period shall be exempt from the provisions of §115.421(a) of this title and §115.423(a) of this title (relating to Alternate Control Requirements).

(B) Surface coating operations on a property which, when uncontrolled, will emit a combined weight of VOC of less than 100 pounds in any consecutive 24-hour period shall be exempt from the provisions of §115.421(a) and §115.423(a) if documentation is provided to and approved by both the Executive Director of the Texas Natural Resource Conservation Commission and the United States Environmental Protection Agency to demonstrate that necessary coating performance criteria cannot be achieved with coating which satisfy applicable emission specifications and that control equipment is not technically or economically feasible.

(C) Mirror backing coating operations located on a property which, when uncontrolled, emit a combined weight of VOC less than 25 tons in one year (based on historical coating and solvent usage) are exempt from the provisions of this undesignated head (relating to Surface Coating Processes).

(4) The following architectural coatings are exempt from the provisions of §115.421(a)(11) of this title:

(A) paints sold in containers of one quart or less;

(B) paints used on roadways, pavement, swimming pools, and similar surfaces;

(C) concentrated color additives;

(D) architectural coatings sold for shipment outside of the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas or for shipment to other manufacturers for repackaging; and

(E) in ozone nonattainment counties other than Dallas and Tarrant, architectural coatings manufactured before July 31, 1992.

(5) Vehicle refinishing (body shops) in Hardin, Jefferson, and Orange Counties are exempt from the requirements of §115.421(a)(8)(B) and §115.422(1) and (2) of this title (relating to Emission Specifications; and Control Requirements).

(6) The repair and recoating of vehicles at in-house (fleet) vehicle refinishing operations and the repair and recoating of vehicles by private individuals are exempt from the requirements of §115.421(a)(8)(B) and §115.422(1) and (2) of this title. This exemption is not applicable if the repair or recoating of a vehicle by a private individual occurs at a commercial operation.

(b) For Gregg, Nueces, and Victoria Counties, the following exemptions shall apply:

(1) Surface coating operations located at any facility which, when uncontrolled, will emit a combined weight of VOC less than 550 pounds (249.5 kg) in any continuous 24-hour period are exempt from the provisions of §115.421(b) of this title.

(2) The following coating operations are exempt from the application of §115.421(b)(8) of this title:

(A) exterior of fully assembled aircraft;

(B) vehicle refinishing (body shops);

(C) exterior of fully assembled marine vessels; and

(D) exterior of fully assembled fixed offshore structures.

(3) The following coating operations are exempt from the application of §115.421(b)(9) of this title:

(A) the manufacture of exterior siding;

(B) tile board; or

(C) particle board used as a furniture component.

Adopted April 30, 1997 Effective May 22, 1997

§115.429. Counties and Compliance Schedules.

(a) All wood parts and products surface coating affected by §115.421(a)(13) of this title (relating to Emission Specifications) in Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Harris, Liberty, Montgomery, Tarrant, and Waller Counties shall be in compliance with this undesignated head (relating to Surface Coating Processes) as soon as practicable, but no later than November 15, 1996.

(b) For persons affected by the change from gallon of solids to gallon of coating (minus water and exempt solvents) for calculating VOC content in §115.421 of this title, any coating operation which does not meet the emission limits (pounds of VOC per gallon of coating, minus water and exempt solvent) in §115.421 of this title but which meets the emission limits (pounds of VOC per gallon of solids) in §115.421 of this title (as in effect June 16, 1995) shall be in compliance with the emission limits (pounds of VOC per gallon of coating, minus water and exempt solvent) in §115.421 of this title as soon as practicable, but no later than December 31, 1996. All such coating operations shall continue to comply with the emission limits (pounds of VOC per gallon of solids) in §115.421 of this title (as in effect June 16, 1995) until these coating operations are in compliance with the emission limits (pounds of VOC per gallon of coating, minus water and exempt solvent) under §115.421 of this title.

Adopted February 14, 1996 Effective March 7, 1996

GRAPHIC ARTS (PRINTING) BY ROTOGRAVURE AND FLEXOGRAPHIC PROCESSES

§§115.432, 115.433, 115.435-115.437, 115.439
Effective May 22, 1997

§115.432. Control Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas as defined in §115.10 of this title (relating to Definitions), the following control requirements shall apply.

(1) No person shall operate or allow the operation of a packaging rotogravure, publication rotogravure, or flexographic printing line that uses solvent-containing ink unless volatile organic compound (VOC) emissions are limited by one of the following:

(A) application to the substrate of low solvent ink with a volatile fraction containing 25% by volume or less of VOC solvent and 75% by volume or more of water and exempt solvent;

(B) application to the substrate of high solids solvent-borne ink containing 60% by volume or more of nonvolatile material (minus water and exempt solvent); or

(C) operation of a carbon adsorption or incineration system to reduce the VOC emissions from an effective capture system by at least 90% by weight. The design and operation of the capture system for each printing line must be consistent with good engineering practice and shall be required to provide for an overall reduction in VOC emissions, as demonstrated to the satisfaction of the Executive Director, upon request, of at least the following weight percentages:

(i) 75% for a publication rotogravure process,

(ii) 65% for a packaging rotogravure process, or

(iii) 60% for a flexographic printing process.

(2) Any graphic arts facility that becomes subject to the provisions of paragraph (1)(A), (B), or (C) of this subsection by exceeding provisions of §115.437(a) of this title (relating to Exemptions) will remain subject to the provisions of this subsection, even if throughput or emissions later fall below exemption limits unless and until emissions are reduced to at or below the controlled emissions level existing prior to implementation of the project by which throughput or emission rate was reduced and less than the applicable exemption limits in §115.437(a) of this title and:

(A) the project by which throughput or emission rate was reduced is authorized by any permit or permit amendment or standard permit or standard exemption required by Chapter 116 of this title (relating to Control of Air Pollution by Permit for New Construction or Modification.) If a standard

exemption is available for the project, compliance with this subsection must be maintained for 30 days after the filing of documentation of compliance with that standard exemption; or

(B) if authorization by permit or standard exemption is not required for the project, the owner/operator has given the Texas Natural Resource Conservation Commission 30 days' notice of the project in writing.

(3) Any capture efficiency testing of the capture system must be conducted in accordance with §115.435(a) of this title (relating to Testing Requirements).

(b) For Gregg, Nueces, and Victoria Counties, no person shall operate or allow the operation of a packaging rotogravure, publication rotogravure, or flexographic printing line that uses solvent-containing ink, unless VOC emissions are limited by one of the following:

(1) application to the substrate of low solvent ink with a volatile fraction containing 25% by volume or less of VOC solvent and 75% by volume or more of water and exempt solvent;

(2) application to the substrate of high solids solvent-borne ink containing 60% by volume or more of nonvolatile material (minus water and exempt solvent); or

(3) operation of a carbon adsorption or incineration system to reduce the VOC emissions from an effective capture system by at least 90% by weight. The design and operation of the capture system for each printing line must be consistent with good engineering practice and shall be required to provide for an overall reduction in VOC emissions, as demonstrated to the satisfaction of the Executive Director upon request of at least the following weight percentages:

(A) 75% for a publication rotogravure process;

(B) 65% for a packaging rotogravure process; or

(C) 60% for a flexographic printing process.

Adopted May 4, 1994 Effective May 27, 1994

§115.433. Alternate Control Requirements.

(a) For all affected persons in the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this section may be approved by the Executive Director in accordance with §115.910 of this title (relating to Availability of Alternate Means of Control) if emission reductions are demonstrated to be substantially equivalent.

(b) For all affected persons in Gregg, Nueces, and Victoria Counties, alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or

exemption criteria in this section may be approved by the Executive Director in accordance with §115.910 of this title if emission reductions are demonstrated to be substantially equivalent.

Adopted February 14, 1996 Effective March 7, 1996

§115.435. Testing Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, compliance shall be determined by applying the following test methods, as appropriate:

(1) Test Methods 1-4 (40 Code of Federal Regulations (CFR) 60, Appendix A) for determining flow rates, as necessary;

(2) Test Method 24 (40 CFR 60, Appendix A) for determining the volatile organic compound content and density of printing inks and related coatings;

(3) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(4) Test Methods 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(5) United States Environmental Protection Agency (EPA) guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December, 1984;

(6) additional performance test procedures described in 40 CFR 60.444;

(7) the capture efficiency shall be measured using applicable procedures outlined in 40 CFR, Part 52.741, Subpart O, Appendix B. These procedures are:

Procedure T	-	Criteria for and Verification of a Permanent or Temporary Total Enclosure
Procedure L	-	VOC Input
Procedure G.2	-	Captured VOC Emissions (Dilution Technique)
Procedure F.1	-	Fugitive VOC Emissions from Temporary Enclosures
Procedure F.2	-	Fugitive VOC Emissions from Building Enclosures

(A) Exemptions to capture efficiency testing requirements:

(i) if a source installs a permanent total enclosure (PTE) which meets the specifications of Procedure T and which directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted from capture efficiency testing requirements. This does not

exempt the source from performance of any control device efficiency testing that may be required. In addition, a source must demonstrate all criteria for a PTE are met during testing for control efficiency.

(ii) if a source uses a control device designed to collect and recover VOC (e.g., carbon adsorber), an explicit measurement of capture efficiency is not necessary if the following conditions are met. The overall control of the system can be determined by directly comparing the input liquid VOC to the recovered liquid VOC. The general procedure for use in this situation is given in 40 CFR 60.433 with the following additional restrictions:

(I) the source must be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average. This must be done within 72 hours following each 24-hour period, and

(II) the solvent recovery system (i.e., capture and control system) must be dedicated to a single process line (e.g., one process line venting to a carbon adsorber system); or if the solvent recovery system controls multiple process lines, the source must be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

(B) The capture efficiency shall be calculated using one of the following four protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the Executive Director and EPA.

(i) Gas/gas method using Temporary Total Enclosure (TTE). EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:

$$CE = Gw / (Gw + Fw)$$

Where:

CE = capture efficiency, decimal fraction
Gw = mass of VOC captured and delivered to control device using a TTE (use Procedure G.2)
Fw = mass of fugitive VOC that escapes from a TTE (use Procedure F.1)

(ii) Liquid/gas method using TTE. EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:

$$CE = (L - F) / L$$

Where:

CE = capture efficiency, decimal fraction

L = mass of liquid VOC input to process (use Procedure L)
F = mass of fugitive VOC that escapes from a TTE (use Procedure F.1)

(iii) Gas/gas method using the building or room in which the affected source is located as the enclosure (BE) and in which G and F are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal production. The capture efficiency equation to be used for this protocol is:

CE = G / (G + Fb)

Where:

CE = capture efficiency, decimal fraction
G = mass of VOC captured and delivered to a control device (use Procedure G.2)
Fb = mass of fugitive VOC that escapes from building enclosure (use Procedure F.2)

(iv) Liquid/gas method using a BE in which L and F are measured while operating only the affected facility. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

CE = (L - Fb) / L

Where:

CE = capture efficiency, decimal fraction
L = mass of liquid VOC input to process (use Procedure L)
Fb = mass of fugitive VOC that escapes from BE (use Procedure F.2)

(C) The following conditions must be met in measuring capture efficiency:

(i) Any error margin associated with a test protocol may not be incorporated into the results of a capture efficiency test.

(ii) All affected facilities shall accomplish the initial capture efficiency testing by July 31, 1992 in Brazoria, Dallas, El Paso, Galveston, Harris, Jefferson, Orange, and Tarrant Counties, and by July 31, 1993 in Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties.

(iii) During an initial pretest meeting, the Texas Natural Resource Conservation Commission (TNRCC) and the source owner or operator shall identify those operating parameters which shall be monitored to ensure that capture efficiency does not change significantly over time. These parameters shall be monitored and recorded initially during the capture efficiency testing and thereafter during facility operation. The TNRCC may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

(8) minor modifications to these test methods and procedures shall be approved by the Executive Director.

(b) For Gregg, Nueces, and Victoria Counties, compliance shall be determined by applying the following test methods, as appropriate:

(1) Test Methods 1-4 (40 CFR 60, Appendix A) for determining flow rates, as necessary;

(2) Test Method 24 (40 CFR 60, Appendix A) for determining the VOC content and density of printing inks and related coatings;

(3) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(4) Test Methods 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(5) EPA guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December, 1984;

(6) additional performance test procedures described in 40 CFR 60.444; or

(7) minor modifications to these test methods and procedures approved by the Executive Director.

Adopted February 14, 1996 Effective March 7, 1996

§115.436. Monitoring and Recordkeeping Requirements.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the owner or operator of any rotogravure or flexographic printing facility shall:

(1) maintain records of the volatile organic compound (VOC) content of all inks as applied to the substrate. Additionally, records of the quantity of each ink and solvent used shall be maintained. The composition of inks may be determined by the methods referenced in §115.435(a) of this title (relating to Testing Requirements) or by examining the manufacturer's formulation data and the amount of dilution solvent added to adjust the viscosity of inks prior to application to the substrate;

(2) maintain daily records of the quantity of each ink and solvent used at a facility subject to the requirements of an alternate means of control approved by the Executive Director in accordance with §115.433(a) of this title (relating to Alternate Control Requirements) which allows the application of inks exceeding the applicable control limits. Such records must be sufficient to demonstrate compliance with the applicable emission limitation on a daily weighted average;

(3) install and maintain monitors to continuously measure and record operational parameters of any emission control device installed to meet applicable control requirements. Such records must be sufficient to demonstrate proper functioning of those devices to design specifications, including:

(A) the exhaust gas temperature of direct-flame incinerators and/or the gas temperature immediately upstream and downstream of any catalyst bed,

(B) the total amount of VOC recovered by a carbon adsorption or other solvent recovery system during a calendar month,

(C) the exhaust gas VOC concentration of any carbon adsorption system, as defined in §115.10 of this title (relating to Definitions), to determine if breakthrough has occurred, and

(D) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities;

(4) maintain the results of any testing conducted at an affected facility in accordance with the provisions specified in §115.435(a) of this title.

(5) maintain all records at the affected facility for at least two years and make such records available upon request to representatives of the Texas Natural Resource Conservation Commission (TNRCC), United States Environmental Protection Agency (EPA), or the local air pollution agency having jurisdiction in the area; and

(6) maintain on file the capture efficiency protocol submitted under §115.435(a)(7) of this title. The owner or operator shall submit all results of the test methods and capture efficiency protocols to the TNRCC within 60 days of the actual test date. The source owner or operator shall maintain records of the capture efficiency operating parameter values on-site for a minimum of one year. If any changes are made to capture or control equipment, the owner or operator is required to notify the Executive Director in writing within thirty (30) days of these changes, and a new capture efficiency and/or control device destruction or removal efficiency test may be required.

(b) For Gregg, Nueces, and Victoria Counties, the owner or operator of any rotogravure or flexographic printing facility shall:

(1) maintain records of the VOC content of all inks as applied to the substrate. Additionally, records of the quantity of each ink and solvent used shall be maintained. The composition of inks may be determined by the methods referenced in §115.435(b) of this title or by examining the manufacturer's

formulation data and the amount of dilution solvent added to adjust the viscosity of inks prior to application to the substrate;

(2) maintain daily records of the quantity of each ink and solvent used at a facility subject to the requirements of an alternate means of control approved by the Executive Director in accordance with §115.433(b) of this title which allows the application of inks exceeding the applicable control limits. Such records must be sufficient to demonstrate compliance with the applicable emission limitation on a daily weighted average;

(3) install and maintain monitors to continuously measure and record operational parameters of any emission control device installed to meet applicable control requirements. Such records must be sufficient to demonstrate proper functioning of those devices to design specifications, including:

(A) the exhaust gas temperature of direct-flame incinerators and/or the gas temperature immediately upstream and downstream of any catalyst bed,

(B) the total amount of VOC recovered by a carbon adsorption or other solvent recovery system during a calendar month,

(C) in Victoria County, the exhaust gas VOC concentration of any carbon adsorption system, as defined in §115.10 of this title, to determine if breakthrough has occurred, and

(D) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities;

(4) maintain the results of any testing conducted at an affected facility in accordance with the provisions specified in §115.435(b) of this title; and

(5) maintain all records at the affected facility for at least two years and make such records available upon request to representatives of the TNRCC, EPA, or the local air pollution agency having jurisdiction in the area.

Adopted February 14, 1996 Effective March 7, 1996

§115.437. Exemptions.

(a) For the Beaumont/Port Arthur, Dallas/Fort Worth, El Paso, and Houston/Galveston areas, the following exemptions shall apply:

(1) In the Beaumont/Port Arthur, Dallas/Fort Worth, and El Paso areas, all rotogravure and flexographic facilities on a property which, when uncontrolled, have a maximum potential to emit a combined weight of volatile organic compounds (VOC) less than 50 tons in one year (based on historical ink and VOC solvent usage, and at maximum production capacity) are exempt from the requirements of §115.432(a) of this title (relating to Control Requirements).

(2) In the Houston/Galveston area, all rotogravure and flexographic facilities on a property which, when uncontrolled, have a maximum potential to emit a combined weight of VOC less than 25 tons in one year (based on historical ink and VOC solvent usage, and at maximum production capacity) are exempt from the requirements of §115.432(a) of this title.

(b) For Gregg, Nueces, and Victoria Counties, all rotogravure and flexographic facilities on a property which, when uncontrolled, emit a combined weight of VOC less than 100 tons (91 metric tons) in one year (based on historical ink and VOC solvent usage) are exempt from the requirements of §115.432(b) of this title.

Adopted February 14, 1996 Effective March 7, 1996

§115.439. Counties and Compliance Schedules.

(a) All affected persons in Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties shall be in compliance with §115.432(a) of this title (relating to Control Requirements), §115.433(a) of this title (relating to Alternate Control Requirements), §115.435(a) of this title (relating to Testing Requirements), §115.436(a) of this title (relating to Monitoring and Recordkeeping Requirements), and §115.437(a) of this title (relating to Exemptions) as soon as practicable, but no later than July 31, 1993.

(b) All affected persons in Dallas, El Paso, Jefferson, Orange, and Tarrant Counties shall be in compliance with §115.437(a)(1) of this title as soon as practicable, but no later than July 31, 1993.

(c) All affected persons in Brazoria, Galveston, and Harris Counties shall be in compliance with §115.437(a)(2) of this title as soon as practicable, but no later than July 31, 1993.

(d) All affected persons in Victoria County shall be in compliance with §115.436(b)(3)(C) of this title as soon as practicable, but no later than July 31, 1993.

Adopted February 14, 1996 Effective March 7, 1996

OFFSET LITHOGRAPHIC PRINTING

§§115.442, 115.443, 115.445, 115.446, 115.449
Effective May 22, 1997

§115.442. Control Requirements.

For the Dallas/Fort Worth, El Paso, and Houston/Galveston areas as defined in §115.10 of this title (relating to Definitions), the following control requirements shall apply:

(1) No person shall operate or allow the operation of an offset lithographic printing line that uses solvent-containing ink, unless volatile organic compound (VOC) emissions are limited by the following:

(A) Any person who owns or operates a heatset web offset lithographic printing press that uses alcohol in the fountain solution shall maintain total fountain solution alcohol to 5.0% or less (by volume). Alternatively, a standard of 10.0% or less (by volume) alcohol may be used if the fountain solution containing alcohol is refrigerated to less than 60°F.

(B) Any person who owns or operates a nonheatset web offset lithographic printing press which prints newspaper and that uses alcohol in the fountain solution shall eliminate the use of alcohol in the fountain solution. Non-alcohol additives or alcohol substitutes can be used to accomplish the total elimination of alcohol use.

(C) Any person who owns or operates a nonheatset web offset lithographic printing press which does not print newspaper and that uses alcohol in the fountain solution shall maintain the use of alcohol at 5.0% or less (by volume). Alternatively, a standard of 10.0% or less (by volume) alcohol may be used if the fountain solution is refrigerated to less than 60°F.

(D) Any person who owns or operates a sheetfed offset lithographic printing press shall maintain the use of alcohol at 10.0% or less (by volume). Alternatively, a standard of 12.0% or less (by volume) alcohol may be used if the fountain solution is refrigerated to less than 60°F.

(E) Any person who owns or operates any type of offset lithographic printing press shall be considered in compliance with this regulation if the only VOCs in the fountain solution are in nonalcohol additives or alcohol substitutes, so that the concentration of VOCs in the fountain solution is 3.0% or less (by weight). The fountain solution shall not contain any isopropyl alcohol.

(F) Any person who owns or operates an offset lithographic printing press shall reduce VOC emissions from cleaning solutions by one of the following methods:

(i) using cleaning solutions with a VOC content of 50% or less (by volume, as used); or

(ii) using cleaning solutions with a VOC content of 70% or less (by volume, as used) and incorporating a towel handling program which ensures that all waste ink, solvents, and cleanup rags shall be stored in closed containers until removed from the site by a licensed disposal/cleaning service.

(2) No person shall operate or allow the operation of a heatset offset lithographic printing press unless VOC emissions from the press dryer exhaust vent are reduced 90% by weight or a maximum dryer exhaust outlet concentration of 20 ppmv is maintained, whichever is less stringent when the press is in operation.

Adopted April 30, 1997 Effective May 22, 1997

§115.443. Alternate Control Requirements

For all affected persons in the Dallas/Fort Worth, El Paso, and Houston/Galveston areas, as defined in §115.10 of this title (relating to Definitions), alternate methods of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this section may be approved by the Executive Director in accordance with §115.910 of this title (relating to Availability of Alternate Means of Control) if emission reductions are demonstrated to be substantially equivalent.

Adopted February 14, 1996 Effective March 7, 1996

§115.445. Approved Test Methods.

For the Dallas/Fort Worth, El Paso, and Houston/Galveston areas as defined in §115.10 of this title (relating to Definitions), compliance shall be determined by applying the following test methods, as appropriate:

(1) Test Methods 1-4 (40 Code of Federal Regulations (CFR) 60, Appendix A) for determining flow rates;

(2) Test Method 24 (40 CFR 60, Appendix A) for determining the volatile organic compound content and density of printing inks and related coatings;

(3) Test Method 25 (40 CFR 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon. To prevent condensation, the probe and filter should be heated to the gas stream temperature, typically closer to 350°F;

(4) Test Methods 25A or 25B (40 CFR 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(5) United States Environmental Protection Agency (EPA) guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December, 1984; or

(6) additional performance test procedures described in 40 CFR 60.444.

Adopted February 14, 1996 Effective March 7, 1996

§115.446. Monitoring and Recordkeeping Requirements.

For the Dallas/Fort Worth, El Paso, and Houston/Galveston areas as defined in §115.10 of this title (relating to Definitions), the following monitoring and recordkeeping requirements shall apply.

(1) The owner or operator of a heatset offset lithographic printing press shall install, calibrate, maintain, and operate a temperature monitoring device, according to the manufacturer's instructions, at the outlet of the control device. The temperature monitoring device shall be equipped with a continuous recorder and shall have an accuracy of 0.5°F.

(2) The owner or operator of any offset lithographic printing press shall install and maintain monitors to continuously measure and record operational parameters of any emission control device installed to meet applicable control requirements on a regular basis. Such records must be sufficient to demonstrate proper functioning of those devices to design specifications, including:

(A) the exhaust gas temperature of direct-flame incinerators and/or the gas temperature immediately upstream and downstream of any catalyst bed;

(B) the total amount of volatile organic compound (VOC) recovered by a carbon adsorption or other solvent recovery system during a calendar month;

(C) the exhaust gas VOC concentration of any carbon adsorption system, as defined in §115.10 of this title (relating to Definitions), to determine if breakthrough has occurred; and

(D) the dates and reasons for any maintenance and repair of the required control devices and the estimated quantity and duration of VOC emissions during such activities.

(3) The dryer pressure shall be maintained lower than the press room air pressure such that air flows into the dryer at all times. A 100% emissions capture efficiency for the dryer shall be demonstrated using an air flow direction measuring device.

(4) The owner or operator of any offset lithographic printing press shall monitor fountain solution alcohol concentration with a refractometer or a hydrometer that is corrected for temperature at least once per eight-shift or once per batch, whichever is longer. The refractometer or hydrometer shall have a visual, analog, or digital readout with an accuracy of 0.5% VOC. A standard solution shall be used to calibrate the refractometer for the type of alcohol used in the fountain. The VOC content of the fountain solution may be monitored with a conductivity meter if it is determined that a refractometer or hydrometer cannot be used for the type of VOCs in the fountain solution. The conductivity meter reading for the fountain solution shall be referenced to the conductivity of the incoming water.

(5) The owner or operator of any offset lithographic printing press using refrigeration equipment on the fountain in order to comply with §115.442(a)(1)(A)-(D) of this title (relating to Control Requirements) shall monitor the temperature of the fountain solution reservoir at least once per hour.

(6) For any offset lithographic printing press with continuous cleaning equipment, flow meters are required to monitor water and cleaning solution flow rates. The flow meters shall be calibrated so that the VOC content of the mixed solution complies with the requirements of §115.442 of this title (relating to Control Requirements).

(7) The owner or operator of any offset lithographic printing press shall maintain the results of any testing conducted at an affected facility in accordance with the provisions specified in §115.445 of this title (relating to Approved Test Methods).

(8) The owner or operator of any offset lithographic printing press shall maintain all records at the affected facility for at least two years and make such records available upon request to representatives of the executive director, the United States Environmental Protection Agency, or the local air pollution agency having jurisdiction in the area.

Adopted April 30, 1997 Effective May 22, 1997

§115.449. Counties and Compliance Schedules.

(a) All affected persons in El Paso County shall be in compliance with §§115.442, 115.443, 115.445, and 115.446 of this title (relating to Control Requirements; Alternate Control Requirements; Testing Requirements; and Monitoring and Recordkeeping Requirements) as soon as practicable, but no later than November 15, 1996.

(b) All affected persons in Collin, Dallas, Denton, and Tarrant Counties shall be in compliance with §§115.442, 115.443, 115.445, and 115.446 of this title as soon as practicable, but no later than one year, after the commission publishes notification in the *Texas Register* of its determination that this contingency rule is necessary as a result of failure to attain the national ambient air quality standard (NAAQS) for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act (FCAA), §172(c)(9).

(c) All affected persons in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties shall be in compliance with §§115.442, 115.443, 115.445, and 115.446 of this title as soon as practicable, but no later than one year, after the commission publishes notification in the *Texas Register* of its determination that this contingency rule is necessary as a result of failure to attain the NAAQS for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in the 1990 Amendments to the FCAA, §172(c)(9).

Adopted April 30, 1997 Effective May 22, 1997